MARKET MARGINS

"Where does the consumer's food dollar go?" This is an often asked question. In response, the Statistics Branch of Alberta Agriculture has been releasing occasional publications called "Market Margins", addressing the issue in an attempt to provide answers.

Prices for various agricultural commodities are collected at three levels in the marketing chain; the producer, wholesale, and retail levels. Due to processing activity, the food item purchased by the consumer is in a form different from the product leaving the farm gate. As a result of processing, and other marketing functions such as transportation, packaging and advertising performed at the wholesale and retail level, the price of the product at each market level will be different. In order to compare producer, wholesale and retail prices, the value of by-products in processing is deducted and the quantity of farm products required to produce the end consumer food product is calculated. For example, the value of by-products such as hides and fats used in the manufacture of other end by-products is deducted; in the baking of bread the proportions of farm products required to produce a loaf of bread must be determined. By making these adjustments, producer, wholesale and retail prices can be compared on a retail equivalent basis. The difference in retail equivalent prices at each marketing level for the same product is known as a "price spread". It is expressed in dollars per unit, whereas the term "margin" is used to express this difference as a percentage of the consumer's food dollar. All spreads plus the producer price total the retail price and all margins plus the producer's share equal 100 per cent.

In this issue of Market Margins, the results of the data collected are summarized for four main food items; milk, beef, pork and bread for the calendar year 1986. For more details concerning methodology, the reader is referred to previous issues and requested to contact the authors directly.

BREAD

The methodology used in calculating bread price spreads was designed to determine price spreads for a 20 oz. (567 g) loaf of sliced white bread. Due to the disparity in retail prices between store brand and private brand white breads, prices and price spreads were calculated for each separately. The baking of store brand breads is done by the retail store and not by private bakeries as is private label breads. Three market levels are recognized in determining price spreads for store brand; the producer, the processor and the retail outlet. These three market levels, in addition to private bakeries are included in price spread estimation of private label bread.

Prices

At the producer level, the producer value for bread flour, rapeseed shortening, sugar beets for sugar and industrial milk for skim milk powder are estimated to determine

CAUTIONARY NOTE

Changes in spreads do not necessarily indicate an increase or decrease in profitability at the various market levels. Costs are not included in the analysis, thus profitability cannot be established. In addition, Market Margins looks at specific products and attempts to adjust food items sold at each level to a retail equivalent basis. In doing so, by-products are created which have value and contribute to value of production at each level.

Nithi Govindasamy & Maureen Whitlock
427-4011
April 1987

87-04255/

TABLE 1

PRICE TO PRODUCERS FOR INGREDIENTS, 1986[1]

(Dollars per 100 loaves)

	#1 CWRS Wheat	Industrial Milk	Canola	Sugar Beets	Total
1st Quarter 1986	6.82	2.66	.67	.28	10.43
2nd Quarter 1986	6.82	2.66	.59	.29	10.36
3rd Quarter 1986	5.90	2.69	.49	.26	9.35
4th Quarter 1986	5.44	2.7	1.50	.17	8.82
Year 1986	6.25*	2.68	.56	.25	9.74*
Year 1985	7.63r	2.62	.80	.24	11.29r

PRICE TO PROCESSORS FOR INGREDIENTS, 1986

(Dollars per loaf)

	Flour	Skim Milk Powder	Shortening	Sugar	Total
1st Quarter 1986	18.55	3.20	1.32	.52	23.59
2nd Quarter 1986	18.68	3.20	1.30	.54	23.72
3rd Quarter 1986	18.68	3.24	1.24	.49	23.66
4th Quarter 1986	19.00	3.26	1.16	.51	23.93
Year 1986	18.73	3.23	1.26	.52	23.73
Year 1985	16.79	3.15	1.49	.47	21.90

* estimated final payment included

r revised

1 Retail equivalent prices at producer and processor levels.

the producer price of agricultural products used in baking bread (Table 1). In 1986, producer prices for wheat averaged $6.25/100 loaves, down 18 per cent from the revised value of $7.63/100 loaves in 1985. Returns from sugar to producers did not show any change from the 1985 level. However, since there was no sugar beet crop in 1985 an estimate had to be made of the value as if there had been a crop. This procedure may have the tendency to underestimate the producer returns for sugar. Similarly, deficiency payments to producers for the 1986 crop are not included in the analysis. This again would have underestimated the producer returns from sugar.

Domestic canola prices declined in 1985/86 and 1986/87, lowering returns to producers. Producer returns for canola declined $0.24/100 loaves from $0.80/100 loaves in 1985 to $0.56/100 loaves in 1986. Total returns to producers in 1986 for all these products averaged $9.74/100 loaves, down 13.7 per cent from $11.29/100 loaves in 1985.

Returns to processors (Table 1) for flour, skim milk powder, shortening and sugar, increased 8.4 per cent in 1986 to $23.73/100 loaves. Millers[1] received $18.73/100 loaves, an increase of $1.94/100 loaves for flour; dairies received $3.23/100 loaves for skim milk powder, up 2.5 per cent from 1985 and processors of shortening received $1.26/100 loaves, a decline of 15.4 per cent from $1.49/100 loaves in 1985.

Retail bread prices for Edmonton and Calgary are shown in Graph 1. Bread prices at the producer, wholesale, retail level are shown in Graph 2. Retail prices for store label bread showed greater variation in 1986 from that in 1985. Retail prices increased in the first quarter, declined in the second, increased in the third and declined again in the fourth quarter. For the year, store label brands averaged $94.08/100 loaves at the retail level, up $3.09 or 3.4 per cent over 1985 (Table 2).

It should be pointed out that a major change occurred in product weight and pricing for private label bread in 1985 and 1986. Although the change was temporary, it altered the pricing structure of a popular brand of private label bread. The private label baker changed loaf size from 567 g to 500 g for several months in 1985 with accompanying lower prices. Although this new loaf size was not priced for this study, the nearest comparable 567 g loaf that was priced, retailed at 10 to 15¢/loaf higher in 1985 than the previously priced 567 g loaf. Subsequently, the 500 g loaf was discontinued in the first quarter of 1986 and the 567 g white loaf re-introduced with a promotional campaign. This campaign appears to have had the effect of lowering product price for this brand for a period of time. In addition prices of competing brands remained stable during this period. Thus, the events that occurred at the retail level could explain the unexpected decline in annual average price for private label bread from 1985 to 1986. However, an examination of retail prices for private label bread from 1983 to 1986 indicates a general increase.

Private label bread prices at the retail level followed a different pattern than store label bread. Prices declined in the first quarter, then increased in the second and third quarters before declining in the fourth. Private label retail prices averaged $110.62/100 loaves in 1986, a decline of $1.92/100 loaves (-1.7 per cent) from 1985.

Calgary and Edmonton prices for both store label and private label brands at the retail level varied significantly in 1986. Edmonton store label brands were consistently higher priced throughout the year. Edmonton store label brands averaged $99.40/100 loaves compared to $89.10/100 loaves in Calgary. Prices for private label brands, both in Edmonton and Calgary fluctuated widely throughout the year with no apparent trend. Edmonton retail prices for private label brands averaged $111.70/100 loaves compared to $109.60/100 loaves in Calgary.

Spreads and Shares

The producer-retail spread for private label bread increased marginally in 1986 to $101.63/100 loaves while the increase in spread for store label bread was $4.64/100 loaves (+5.8 per cent). The producer-processor spread increased $3.39 (+32 per cent) for both private label and store label breads in 1986. Processor-retail spreads

[1] (Prices paid by millers for wheat are regulated by the Canadian Wheat Board under the Federal government's domestic wheat pricing policy.)

TABLE 2

QUARTERLY BREAD PRICES, SPREADS AND SHARE, 1986[1]

(Dollars per 100 loaves)

	Producer Price	Processor Price	Wholesale/ BakerPrice	RetailPrices	
				Private Label	Store Label
1st Quarter 1986	10.43	23.59	90.67	108.46	95.72
2nd Quarter 1986 1	0.36	23.72	94.00	111.35	91.95
3rd Quarter 1986	9.35	23.67	94.00	113.13	94.84
4th Quarter 1986	8.82	23.93	94.00	109.54	93.79
1986	9.74	23.73	93.17	110.62	94.08
1985	11.30[r]	21.89	101.25	112.54	90.99

	Producer -Processor Spread	Processor -Bakery Spread	Bakery -Retail Spread	Processor -Retail Spread	Producer - Retail Spread
Private Label					
1st Quarter 1986	13.16	67.07	17.80	84.87	98.03
2nd Quarter 1986	13.36	70.28	17.35	87.63	100.99
3rd Quarter 1986	14.31	70.34	19.13	89.47	103.78
4th Quarter 1986	15.11	70.07	15.54	85.61	103.71
1986	13.99	69.44	17.46	86.90	101.63
1985	10.60[r]	79.36	11.29	90.65	101.24[r]
Store Label					
1st Quarter 1986	13.16	N/A	N/A	72.13	85.29
2nd Quarter 1986	13.36	N/A	N/A	68.23	81.58
3rd Quarter 1986	14.31	N/A	N/A	71.19	85.50
4th Quarter 1986	15.11	N/A	N/A	69.86	84.97
1986	13.99	N/A	N/A	70.35	84.34
1985	10.60[r]	N/A	N/A	69.10	79.70[r]

	Producer's Share	Processor's Share	Wholesale/Baker's Share	Retailer's Share
Private Label				
1st Quarter 1986	9.6	12.1	61.8	16.4
2nd Quarter 1986	9.3	12.0	63.1	15.6
3rd Quarter 1986	8.3	12.7	62.2	16.9
4th Quarter 1986	8.0	13.8	64.0	14.2
1986	8.8	12.6	62.8	15.8
1985	10.1[r]	9.4[r]	70.6	9.8
Store Label				
1st Quarter 1986	10.9	13.7	N/A	75.4
2nd Quarter 1986	11.3	14.5	N/A	74.2
3rd Quarter 1986	9.8	15.1	N/A	75.0
4th Quarter 1986	9.4	16.1	N/A	74.5
1986	10.4	14.9	N/A	74.8
1985	12.4[r]	11.6[r]	N/A	75.9

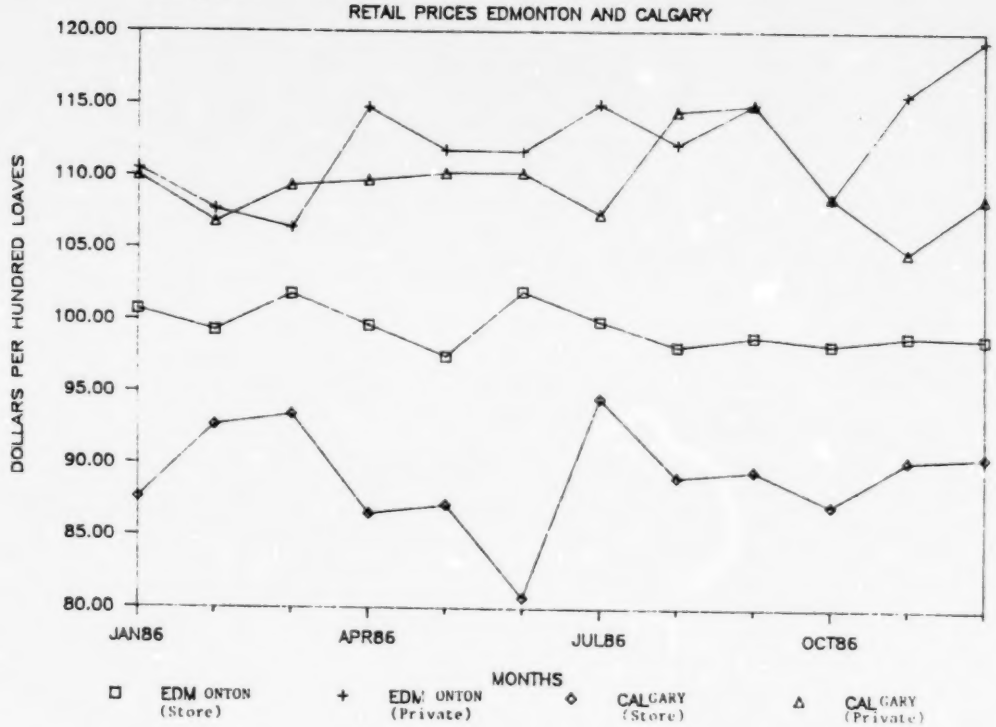
N/A - Not Applicable

[1] Totals may not add due to rounding

[r] Revised

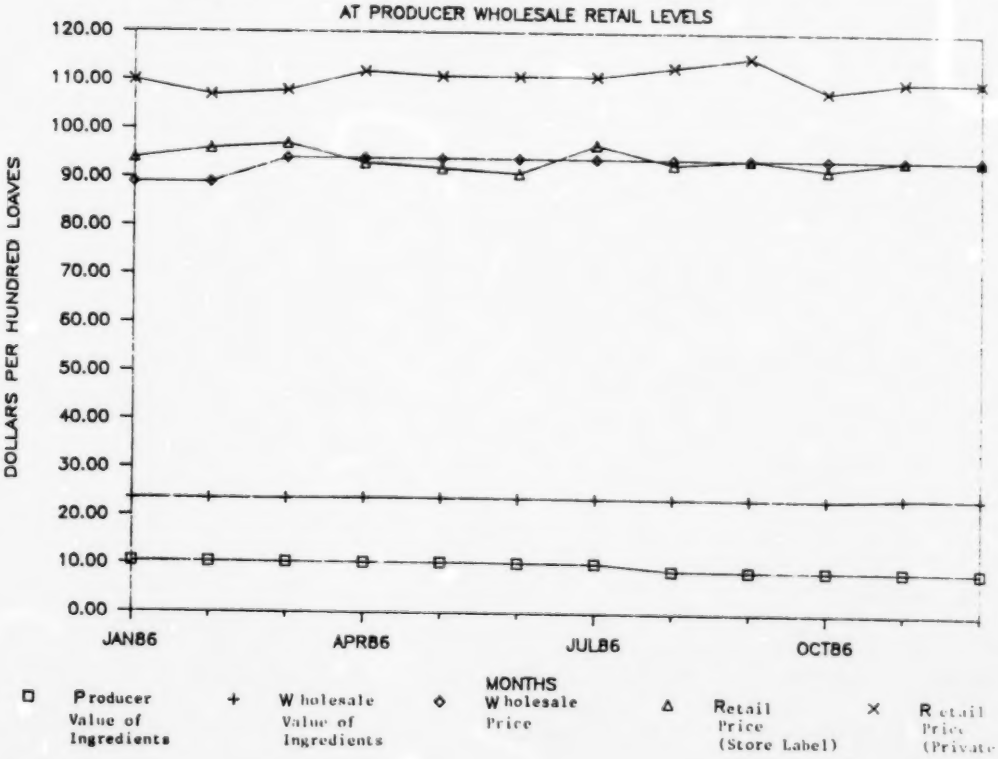
Graph 1 BREAD PRICES 1986

RETAIL PRICES EDMONTON AND CALGARY



Graph 2 BREAD PRICES 1986

AT PRODUCER WHOLESALE RETAIL LEVELS



declined $3.75/100 loaves and increased $1.25/100 loaves for private and store label bread respectively.Table 2 indicates the distribution of the consumer's bread dollar in 1986. The producer's share declined 1.3 percentage points to 8.8 per cent for private label bread and 2.0 percentage points to 10.4 per cent for store label bread. This decline may have been exaggerated due to the assumptions underlying the methodology and therefore should be interpreted with caution.

The processor's share increased from 9.4 per cent to 12.6 per cent for private label bread and went up from 11.6 per cent to 14.9 per cent for store label bread. The producer-processor spread continued to widen in 1986 as a result of declining producer prices and an increase in processor prices. The 32 per cent increase in producer-processor spread exceeded the increase in retail prices for both private and store label breads, thus raising the processor's share.

While the retail price of private label bread declined in 1986, the retailer's share increased from 9.8 per cent in 1985 to 15.8 per cent in 1986. Conversely, while the retail price of store label bread increased in 1986, the retailer's share declined from 75.9 per cent in 1985 to 74.8 per cent in 1986. For private label bread, both processors and retailers increased their share of the retail price while producers and wholesalers saw their shares decline. For store label bread, the processors' share increased while the shares of both producers and retailers declined.

MILK

Prices

Milk prices at producer, wholesale and retail levels are shown in Graph 3. The prices on the graph correspond to minimum prices set by the Public Utilities Board (P.U.B.).

At the producer level, the P.U.B. regulated prices declined to $50.09/hl in April from $51.07/hl. They declined again to $49.11/hl in October and to $48.13/hl in December for a total decline of $2.94/hl for the calendar year 1986.

At the wholesale level the P.U.B. regulated price in January 1986 was $81/hl.

Graph 3 MILK PRICES, 1985–1986

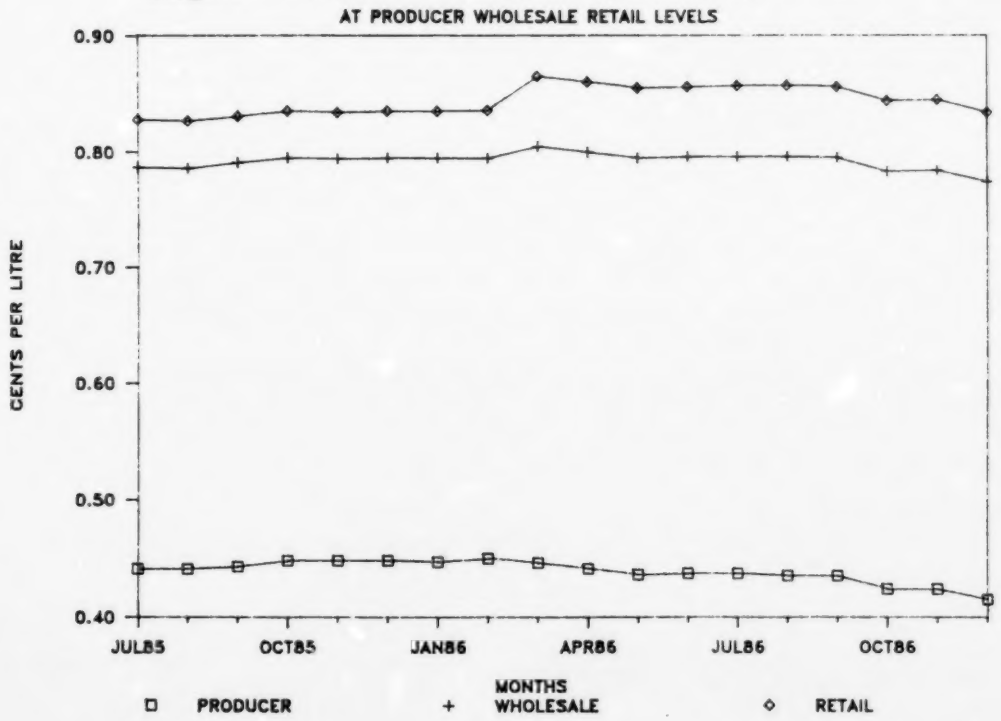


TABLE 3

QUARTERLY MILK PRICES[1], SPREADS AND SHARE, 1986[2]

(Dollars per litre)

	Producer Price*		Wholesale Price		Retail Price	
	1985	1986	1985	1986	1985	1986
1st Quarter	.434	.448	.777	.798	.818	.845
2nd Quarter	.440	.438	.784	.797	.825	.857
3rd Quarter	.442	.436	.788	.796	.829	.857
4th Quarter	.448	.421	.795	.780	.835	.841
YEAR	.441	.436	.786	.793	.827	.850

	Producer -Wholesale Spread		Wholesale -Retail Spread		Producer -Retail Spread	
	1985	1986	1985	1986	1985	1986
1st Quarter	.344	.350	.040	.047	.384	.397
2nd Quarter	.344	.359	.041	.060	.385	.419
3rd Quarter	.347	.360	.041	.060	.387	.420
4th Quarter	.347	.360	.040	.061	.387	.420
YEAR	.346	.357	.041	.057	.386	.414

	Producer's Share		Wholesaler's Share		Retailer's Share	
	1985	1986	1985	1986	1985	1986
	%	%	%	%	%	%
1st Quarter	53.0	53.0	4.21	41.4	4.9	5.6
2nd Quarter	53.3	51.1	41.7	41.9	5.0	7.0
3rd Quarter	53.3	50.9	41.9	42.0	4.9	7.1
4th Quarter	53.6	50.1	41.6	42.7	4.8	7.3
YEAR	53.3	51.3	41.8	42.0	5.0	6.7

[1] Retail equivalent prices at producer and wholesale levels.

[2] Totals may not add due to rounding.

* Prices actually received by producer calculated by weighting and using actual kgs of butterfat produced.

This was increased to $82/hl in March. In April, the price declined to $81/hl. It then declined again in October and December 1986 and is now at $79/hl.

Retail prices started off the year at $85/hl. The price was increased by 3¢/l to $88/hl in March. In April, the price was reduced back to $87/hl and then to $86/hl in October. A final reduction took place in December 1986 and it now stands at $85/hl.

For the calendar year 1986, producer prices averaged $43.6/hl, declining $0.5/hl (-1.13 per cent) from 1985 (Table 3). Wholesale prices averaged $79.3/hl in 1986, up $0.7/hl or 0.9 per cent over 1985. Retail prices averaged $85/hl, up $2.3/hl (+2.78 per cent) over 1985. The P.U.B. regulated minimum price of milk at the producer level declined three times in 1986, reflecting the decline in the feed cost component of the milk pricing formula used by P.U.B.As minimum prices are regulated by PUB, there is little fluctuation in PUB prices. At the producer level, to adjust producer prices to a retail equivalent basis, the value of butterfat produced surplus to fluid milk requirements is subtracted. Surplus butterfat is used to manufacture butter and cheese. As the surplus butterfat is essentially a by-product of fluid milk manufacturing, the value of the butterfat used in the manufacture of other dairy products is deducted from the producer price to derive a retail equivalent price. The value of surplus butterfat subtracted fluctuates with:

1) changes in consumer demand for the type of milk product which affects the quantity of total butterfat consumed in milk products;
2) the amount of butterfat produced per hectolitre of milk on farms and;
3) the butterfat differential (i.e. the price of butterfat) paid or deducted per 0.1 kg butterfat.

As a result, price fluctuations for milk at the producer level can be greater than PUB regulated price fluctuations.

Spreads and Shares

The distribution of the consumer's milk dollar is shown in Table 3. The producer-wholesale spread increased in 1986, averaging 35.7¢/litre, an increase of 1.1¢/litre (+3.2 per cent) over 1985. The wholesaler's share as a per cent of retail prices averaged 0.2 percentage points higher at 42.0 per cent. The increase in the producer-wholesale spread of 3.2 per cent exceeded the 2.8 per cent increase in retail prices, resulting in increased wholesaler's share.

In 1986, the producer's share of the consumer's milk dollar declined to 51.3 per cent, down 2.0 percentage points. The wholesaler's share increased marginally while the retailer's share increased to 6.7 per cent from 5.0 per cent the previous year.

PORK

Prices

Producer, wholesale and retail pork prices on a retail equivalent basis are shown in Graph 4. In 1986, prices at the producer level showed an increase in the first quarter, a slight decline in the second quarter, then a dramatic increase in the third quarter followed by a moderate decline in the fourth. Except for a slight decline in the second quarter, wholesale prices followed the same trend as producer prices. At the retail level, prices in Edmonton and Calgary showed a steady upward trend in 1986.

Several factors contributed to large fluctuations in prices for hogs in 1986. Declining production in the second and third quarters both in the U.S. and Canada boosted prices at the producer level to unprecedented highs. Lower than expected cold storage stocks, inventories, farrowing and farrowing intentions were all strong market signals for price strength. In Alberta, however, production declines in the summer caused by disruptions in slaughterings necessitated larger than normal out-of-province shipments of live hogs. This factor dampened the strong price increase somewhat in July. Prices recovered and peaked in the late stages of the third quarter before declining moderately due to seasonal increases in production late in the year. With low feed prices and high output prices, net margins were at historical highs for hog producers in 1986.

Prices at all three levels of the marketing chain averaged substantially higher than in 1985 (Table 4) . Average producer prices increased 20 per cent to $2.21/kg, while wholesale prices averaged

TABLE 4

QUARTERLY PORK PRICES[1], SPREADS AND SHARE, 1986[2]
(Dollars per kilogram)

	Producer Price		Wholesale Price		Retail Price			
	1985	1986	1985	1986	1985	1986	1986 Edm.	1986 Cal.
1st Quarter	1.92	1.94	3.23	3.36	4.44	4.67	4.62	4.72
2nd Quarter	1.68	1.86	3.05	3.22	4.47	4.68	4.68	4.70
3rd Quarter	1.82	2.62	3.18	3.85	4.49	5.72	5.74	5.71
4th Quarter	1.93	2.43	3.33	4.03	4.51	5.93	6.02	5.84
YEAR	1.84	2.21	3.21	3.62	4.48	5.25	5.27	5.24

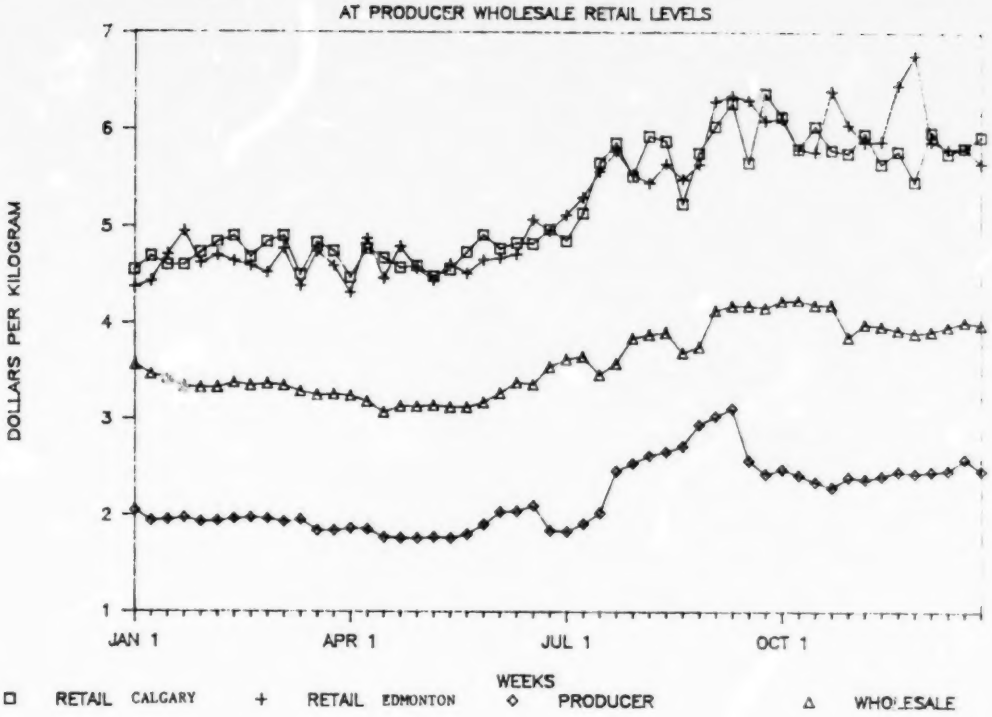
	Producer Wholesale Spread		Wholesale-Retail Spread		Producer-Retail Spread	
	1985	1986	1985	1986	1985	1986
1st Quarter	1.32	1.42	1.20	1.31	2.52	2.73
2nd Quarter	1.37	1.36	1.42	1.46	2.79	2.82
3rd Quarter	1.36	1.22	1.31	1.87	2.67	3.10
4th Quarter	1.40	1.60	1.18	1.90	2.58	3.50
YEAR	1.38[r]	1.40	1.26[r]	1.64	2.64[r]	3.04

	Producer's Share		Wholesaler's Share		Retailer's Share	
	1985	1986	1985	1986	1985	1986
1st Quarter	43.3	41.5	29.5	30.4	27.3	28.1
2nd Quarter	37.5	39.7	30.6	29.1	31.8	31.2
3rd Quarter	40.6	45.9	30.3	21.5	29.2	32.7
4th Quarter	42.7	41.0	31.0	27.0	26.2	32.0
YEAR	41.0	42.0	30.4	27.0	28.6	31.0

[1] Retail equivalent prices at producer and wholesale levels.
[2] Totals may not add due to rounding.
[r] Revised

Graph 4 PORK PRICES, 1986

AT PRODUCER WHOLESALE RETAIL LEVELS



$3.62/kg, up 12.8 per cent over 1985. Average retail prices at $5.25/kg, were 17 per cent higher in 1986.

Unlike 1985, retail pork prices in Edmonton were higher than in Calgary in the third and fourth quarters of 1986. This may have resulted from slaughtering disruptions that occurred in Edmonton during the summer. Overall, the retail price in Edmonton and Calgary for the year did not differ markedly.

Spreads and Shares

The producer-wholesale spread widened again in 1986 (Table 4). On an annual average basis, the spread increased marginally to $1.40/kg from $1.38/kg. Wholesale-retail spreads also rose in 1986. For the year, the spread widened to $1.64/kg from $1.26/kg, up 30 per cent. Producer-retail spreads increased 15.2 per cent, from $2.64/kg to $3.04/kg.

The producer's share of the consumer's food dollar increased marginally from 41 per cent in 1985 to 42 per cent in 1986, while the wholesaler's share declined from 30.4 per cent to 27 per cent. The retailer's share increased from 28.6 per cent to 31 per cent in 1986.

BEEF

Prices

Alberta slaughter cattle and beef prices declined in the first quarter of 1986 from the fourth quarter of 1985, due to increased supplies and increased carcass weights during this period (Graph 5) . Except for brief rallies, prices continued their downward trend into the second quarter before rebounding in the third and fourth quarters of 1986. Renewed price strength in the third and fourth quarters was the result of tightening supplies and a narrowing of the basis between Alberta markets and other Eastern Canadian and U.S. markets.

Producer and wholesale prices were lower in 1986 than in 1985 while retail prices increased (Table 5) . Producer prices declined to $3.37/kg in the second quarter before rebounding to $3.49/kg in the third quarter and $3.83/kg in the fourth. For the calendar year, producer prices were not significantly different from 1985. Wholesale prices

TABLE 5

QUARTERLY BEEF PRICES[1], SPREADS AND SHARE, 1986[2]
(Dollars per kilogram)

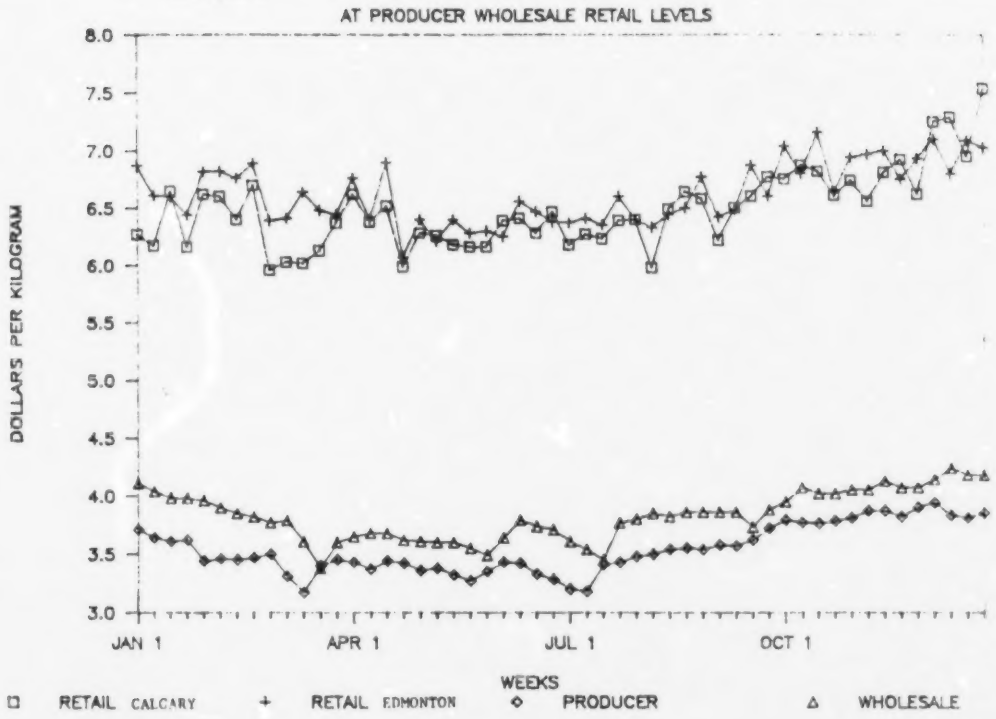
	Producer Price		Wholesale Price		Retail Price			
	1986	1986	1985	1986	1985	1986	1985 Edm.	1986 Cal.
1st Quarter	3.75	3.48	4.03	3.83	6.29	6.47	6.63	6.31
2nd Quarter	3.68	3.37	3.96	3.64	6.44	6.37	6.41	6.32
3rd Quarter	3.24	3.49	3.56	3.76	6.21	6.45	6.50	6.40
4th Quarter	3.58	3.83	3.82	4.09	6.37	6.92	6.94	6.90
YEAR	3.56	3.54	3.84	3.83	6.33	6.55	6.62	6.48

	Producer Wholesale Spread		Wholesale-Retail Spread		Producer-Retail Spread	
	1985	1986	1985	1986	1985	1986
1st Quarter	.28	.34	2.26	2.67	2.54	3.01
2nd Quarter	.28	.28	2.48	2.72	2.76	3.00
3rd Quarter	.32	.28	2.65	2.70	2.97	2.97
4th Quarter	.24	.26	2.55	2.84	2.78	3.10
YEAR	.28	.29	2.49	2.73	2.76	3.02

	Producer's Share		Wholesaler's Share		Retailer's Share	
	1985	1986	1985	1986	1985	1986
1st Quarter	59.6	53.8	4.5	5.4	35.9	40.8
2nd Quarter	57.2	52.9	4.3	4.2	38.5	42.9
3rd Quarter	52.2	54.1	5.2	4.2	42.7	41.7
4th Quarter	56.3	55.3	3.8	3.8	40.0	40.9
YEAR	56.3	54.0	4.4	4.4	39.3	41.5

[1] Retail equivalent prices at producer and wholesale levels.
[2] Totals may not add due to rounding.

Graph 5 BEEF PRICES, 1986



retreated in the second and third quarters but finished the year at $3.83/kg which was again similar to 1985 levels. Retail prices however, finished the year at $6.55/kg, 3.5 per cent higher than in 1985.

Spreads and Shares

Producer-wholesale spreads in 1986 were similar to those in 1985. The producer-wholesale spread averaged $0.29/kg in 1986 compared to $0.28/kg in 1985 as shown in Table 5.

Wholesale-retail spreads increased throughout the year. The 1986 annual average spread was $2.73/kg, up 9.6 per cent over 1985.

Producer-retail spreads were also higher in 1986. The annual- average spread was $3.02/kg, up 9.4 per cent over 1985.

The producer's share of the consumer's beef dollar declined in 1986 to 54 per cent, 2.3 percentage points lower than in 1985. The wholesaler's share remained the same as in 1985 at 4.4 per cent. The retailer's share was consistently higher in 1986 and finished the year at 41.5 per cent, up 2.2 percentage points over 1985.